

Appl. No. 09/926,436
 Amdt. dated September 17, 2007
 Reply to Office Action of March 16, 2007

REMARKS

Applicant has reviewed the rejection of claims 1-8, 10-14 and 16-19 under 35 U.S.C. 103(a) in view of Grantges (6,324,684) in combination with Nelson (6,553,422). Applicant has reviewed the disclosures of Nelson and Grantges and does not agree with the Examiner's interpretation thereof, in view of Applicant's pending claims 1-8, 10-14 and 16-19. Applicant has the following comments on Nelson and Grantges.

Grantges

Applicant confirms the correctness of the Examiner's statement of "However, Grantges failed to teach a polling server located logically behind the firewall, the polling server being configured for polling the proxy server to pull the received printing data across the firewall from the queue of the proxy server to the polling server".

Indeed, Applicant agrees with the Examiner that one can find no mention or suggestion of polling in the disclosure of Grantges, since the act of polling implies an *asynchronous* transfer of data between the sender and the recipient of the data. Instead, Grantges is focused on *synchronous* transfer of data, which is contrary to Applicant's claimed invention. This is evidenced through the teachings of Grantges, namely paragraph 4 (given below with *emphasis added*) of the Detailed Description of the Preferred Embodiment, again in detail further in the text, and in the flow diagram of Figure 2, which shows initiation of the synchronous data communication process from *outside* (i.e. network side) of the firewall.

"Before proceeding to a detailed description of computer system 20, a general overview of the operation established by the invention will be set forth, as viewed by user 18 of client computer 22. Initially, user 18 of client computer 22 enters the destination URL into a web browser portion of client computer 22. The web browser then issues an HTTP request across insecure network 26, which is routed to proxy server 34. The user 18 may then be presented with a "popup" message that a secure network connection is about to be established. The message may also ask which X.509 digital certificate user 18 wishes to use for authentication. The user-selected X.509 digital certificate is then sent to proxy server 34. At this point, a first level authentication is conducted, outside the firewall, by proxy server 34 (e.g., checks to see whether the X.509 certificate has been issued by a predetermined preapproved certificate authority). *If authenticated at this level, proxy server 34 then sends the information contained in the client's digital certificate through firewall system 32 to gateway 38 to be authenticated at a second, more substantive level.* The second level authentication involves examining the particulars of the X.509 digital certificate using the data stored on authorization server 46. If user 18 is authorized to access multiple

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applications, the next item after the "popup" message to be displayed to user 18 is an "options page", presenting the multiple choices. Once a particular application is selected, the next item to be displayed for user 18 is a welcome page of the selected application. Secure, authenticated remote access is complete. In accordance with the present invention, computer system 20 provides an efficient mechanism for routing the remote user 18 of client computer 22 to the selected application being served by one of the destination servers."

Accordingly, the proper interpretation of Grantges is that the data communication process is initiated by the client computer 22, which sends a message to the proxy server 34, which then goes through the firewall, first to gateway 38. It is only after that, does the interaction with the proxy server 40 happen. So in Grantges, Applicant submits that the data communication process is *synchronous*, as it is initiated by the client 22 and requires a port to *already* be open inbound in the firewall, which is contrary to the claimed invention of "pull any said received printing data". Applicant emphasizes that the gateway server 38 of Grantges has to be contacted first from outside of the firewall, before the process of proxy server 40 (inside the firewall) commencing communication with proxy server 34 (outside the firewall).

In addition, Applicant has reviewed the disclosure of Grantges and cannot find the Examiner's support for Applicant's claimed element of "the proxy server having a queue for storing the received printing data". Accordingly, Applicant respectfully requests an appropriate explicit citation in Grantges that the Examiner is relying upon for obviousness of this claim element.

Accordingly, in view of the above discussion, Applicant submits that Grantges does not teach any reference to asynchronous communication of data through a firewall, nor does Grantges teach the use of a queue to facilitate that asynchronous communication. In fact, Grantges can only be attributed to the teachings of generic *synchronous* network communications that are *initiated from a remote location* (e.g. client 22) and directed to a local location (e.g. through proxy server 40).

Nelson

Applicant has reviewed the teachings of Nelson and cannot find any reference or suggestion of polling through a firewall, as suggested by the Examiner.

Applicant has found a direct reference to polling in Nelson in column 4 - line 65 to column 5 - line 8, however only in relation to an email server 135 that is not described as used in combination with the server/firewall 145 (see also Figure 2). Further, Applicant submits that, clearly, Figure 2 shows a direct connection (that bypasses the server/firewall 145) between the email server 135 and the remote processor 157, as well as a direct connection (that bypasses the server/firewall

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145) between the local processor 122 and the email server 135. Accordingly, Applicant submits that email communications of Nelson are sent directly over the Internet 150 from the processor 157 to the email server 135, which is then periodically polled (without interaction through the server/firewall 145) by the local processor 122.

In view of the above discussion and cited portions of Nelson, Applicant submits that asynchronous email communication (i.e. "periodically polls email server 135") was known by Nelson at least as of the filing date of the 6,553,422 patent, but not in relation to a firewall. Applicant argues that if Nelson intended their teachings to include polling initiated from inside of a firewall, they would have taught such explicitly. Instead, Nelson mentions firewall and the act of polling *but in separate contexts* that are clearly not related in any manner and are therefore disconnected. In other words, there is no motivation to be found in Nelson that would lead one of ordinary skill in the art to combine the teachings of polling and use of a firewall, except with direct knowledge of Applicant's teachings which is impermissible hindsight.

Applicant has also reviewed the teachings of Nelson as cited by the Examiner, namely column 2 - lines 4-38, column 1 - lines 16-18, column 2 - lines 1-26, column 1 line 62 through column 2 line 25, column 2 - lines 45-52, as well as the Abstract. In response, Applicant cannot find any direct teachings in Nelson that provide for the architecture of a proxy server with a queue that is "located logically outside the firewall" and a polling server that is "located logically inside the firewall", as presently claimed. Instead Applicant submits that Nelson describes a fundamentally different network communications architecture of: a remote processor 157 (of machine 70); the Internet 65; a machine/firewall 60 and a local processor 122 (of machine 50). Applicant argues that only Nelson's machine 70 is external to the machine/firewall 60 (and does not function as "a proxy server" as proposed, rather as a provider of instructions based on *synchronous* communications implemented between the machines 70,50, which are on either side of the machine 60 that *acts* as a firewall. Accordingly, Applicant submits the Examiner cited combination (in Nelson) of a proxy server, a network, a firewall, and a polling server (in communication with the proxy server through the firewall over the network) is simply not provided in Nelson.

However, if the Examiner chooses to ignore the fact that the claimed combined features of a proxy server, a network, a firewall, and a polling server are not disclosed in Nelson, Applicant further submits that Nelson only teaches *synchronous* communications between the machines 70,50, which is contrary to the Examiner's purported findings in Nelson of "polling the proxy server to pull the received printing data". Applicant notes that Nelson teaches the initiation of communication from inside of the machine/firewall 60 by the local processor 122 through sending of a message via the machine 60 over the Internet 65 to the remote processor 157, thereby prompting the remote processor 157 to send a command back to the local processor 157. However the difference between this message communication of Nelson and Applicant's claimed invention is that

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Nelson's communications (i.e. request 75,170 and corresponding response 76,171, see column 2 lines 30-37 and Figures 1,2) are *synchronous* in nature and do *not* involve any use of polling (as presently claimed) to provide for *asynchronous* communications. Explicit confirmation of this synchronous deficiency in Nelson can be found in column 6, lines 50-55 as "every message sent from the remote processor to the local processor *must be preceded* by an authorization from the local processor", *emphasis added*. This authorization from the local processor is included in the messages that are communicated from the local processor to the remote processor, via the machine 60.

Further, as provided by the teachings of Nelson, the remote machine does not involve a queue, as presently claimed, since the remote machine does not expect a request message from the local machine until the request message is received. Once the request message is received, then the remote machine formulates an appropriate response message (on a per request message basis -- see column 2 lines 29-36) and sends back this formulated message to the local machine, hence the synchronous nature of the machine 50,70 communication.

In view of the above, Applicant argues that Nelson process when applied to Applicant's system in the current application would be for the local printing device 104 to send a request to the remote terminal 200 to begin sending a print job back to the printer. This synchronous communication process is not what is being claimed by the Applicant, rather the use of a queue at the proxy server, located outside of the firewall, to allow application data (e.g. print data) to be stored until a poll request is received through the firewall from the polling server. The poll request seeks to determine if any application data is available in the queue, and if so then proceeds to pull the application data back through the firewall. This asynchronous transfer of the application data from the terminal to the network resource (e.g. printer) provides for an advantage not given in either Grantges or Nelson, namely the ability to open a port in the firewall at the choosing of the polling server, rather than leaving a port in the firewall open (a security risk) for receiving the application data unannounced from the network terminal. Applicant submits that neither Grantges nor Nelson explicitly teaches the use of polling through a firewall asynchronously, initiated from inside of the firewall, in order to obtain any available application data stored in a queue resident outside of the firewall.

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In view of the above discussion, Applicant believes that the 103(a) rejection is hereby overcome and requests a corresponding Notice of Allowance.

Obviousness Type Double Patenting

Applicant has reviewed the Examiner's comments concerning double patenting and will, upon receipt of a notice of allowance, present a timely filed terminal disclaimer if deemed necessary.


Applicants Application

Applicant has amended claims 1 and 3 to explicitly define the claimed invention as intended, namely

"polling the proxy server to determine a status of the queue and to pull the any received printing data across the firewall from the queue of the proxy server".

The Examiner is invited to contact the undersigned for any clarification of the above.

Respectfully submitted,



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